

WHAT IS CLAIMED IS:

- 1 1. A method comprising:
 - 2 monitoring a first sensor, the first sensor communicatively coupled to a
 - 3 high thermal dissipating object in a system to monitor a
 - 4 temperature of the object;
 - 5 monitoring a second sensor, the second sensor communicatively coupled
 - 6 to the system to monitor a temperature of the system;
 - 7 entering a first stage by causing at least one fan in the system to operate
 - 8 in response to conditions as detected by the first and second
 - 9 sensors; and
 - 10 entering an intermediary stage by reducing the speed of at least one of the
 - 11 at least one fans in response conditions as detected by the first and
 - 12 second sensors.
- 1 2. The method of claim 1, wherein one of the at least one fans directs airflow
- 2 at a first speed towards a main section of a heat sink that is in contact with
- 3 a high thermal dissipating object.
- 1 3. The method of claim 1, wherein the conditions detected by the first and
- 2 second sensors that cause said entering of the first stage comprise at
- 3 least one of:
- 4 the high thermal element dissipating full thermal design power; and

5 elevated environmental temperatures.

1 4. The method of claim 3, wherein conditions detected by the first and
2 second sensors that cause said entering of the intermediary stage
3 comprises at least one of:

4 reduced thermal design power; and

5 decreased environmental temperatures.

1 5. The method of claim 1, additionally comprising entering a final stage by
2 causing each of the at least one fans to shut off.

1 6. The method of claim 1, wherein said causing at least one fan to operate
2 comprises causing at least a first and second one of the at least one fans
3 to operate in succession.

1 7. The method of claim 1, wherein said causing at least one fan to operate
2 comprises causing at least a first and second one of the at least one fans
3 to operate simultaneously.

1 8. A method comprising:
2 detecting a first set of conditions by monitoring a first sensor
3 communicatively coupled to a high thermal dissipating object in a
4 system;

5 detecting a second set of conditions by monitoring a second sensor
6 communicatively coupled to the system;

7 in response to detecting the first set of conditions, causing an impinging
8 fan to direct airflow at a first speed onto a main section of a heat
9 sink in contact with a high thermal dissipating object, and causing a
10 system fan to direct airflow onto an extended section of the heat
11 sink; and

12 in response to detecting the second set of conditions, causing the
13 impinging fan to reduce its speed.

1 9. The method of claim 8, wherein the first set of conditions comprises at
2 least one of:

3 the high thermal dissipating object dissipating full thermal design power;
4 and
5 elevated temperatures in the system.

1 10. The method of claim 8, wherein the impinging fan completely shuts off in
2 response to detecting the second set of conditions.

1 11. The method of claim 8, additionally comprising entering a final stage by
2 causing the impinging and system fans to shut off.

1 12. The method of claim 8, wherein the high thermal dissipating object
2 comprises a CPU (central processing unit) in a computer system.

1 13. A system comprising:

2 an object having high thermal dissipating properties (high thermal

3 dissipating object);

4 a first sensor communicatively coupled to the high thermal dissipating

5 object to determine a temperature of the high thermal dissipating

6 object;

7 at least one second sensor communicatively coupled to the system to

8 determine a temperature of the system;

9 a heat sink in adjacent contact with the high thermal dissipating object, the

10 heat sink having a main section located nearest the high thermal

11 dissipating object, and an extended section farthest from the high

12 thermal dissipating object, the sections being connected by at least

13 one heat pipe;

14 a first fan to direct airflow towards the main section of the heat sink;

15 a second fan to direct airflow towards the extended section of the heat

16 sink; and

17 a memory to store a computer program that detects conditions under

18 which a first stage is entered, and conditions under which an

19 intermediary stage is entered, and which causes the first and

20 second fans to operate under speeds in accordance with the first

21 and intermediary stages.

1 14. The system of claim 13, wherein one of the at least one second sensors is

2 located in close proximity to the first fan, and a second one of the at least

- 3 one second sensors is located in close proximity to the second fan.
- 1 15. The system of claim 13, wherein the first fan is co-planar with the second
2 fan.
- 3 16. The system of claim 13, wherein the heat sink additionally comprises fins
4 on the main section and the extended section.
- 1 17. The system of claim 16, wherein the fins on the main section of the heat
2 sink are denser than the fins on the extended section of the heat sink.
- 1 18. The system of claim 17, wherein the fins on the extended section of the
2 heat sink are twice the spacing as the fins on the main section.
- 1 19. The system of claim 16, wherein the fins on the main section of the heat
2 sink are spaced about equally, and about the same size as the fins on the
3 extended section of the heat sink.
- 1 20. A system comprising:
2 an object having high thermal dissipating properties (high thermal
3 dissipating object);
4 a first sensor communicatively coupled to the high thermal dissipating
5 object to determine a temperature of the high thermal dissipating
6 object;
7 at least one second sensor communicatively coupled to the system to
8 determine a temperature of the system;

9 a heat sink in adjacent contact with the high thermal dissipating object, the
10 heat sink having a main section located nearest the high thermal
11 dissipating object, and an extended section farthest from the high
12 thermal dissipating object, the sections being connected by a high
13 heat conductivity material;

14 a first fan;

15 a second fan; and

16 a memory to store a computer program to:

17 detect a first set of conditions and a second set of conditions; and

18 cause the first fan and the second fan to operate in accordance

19 with the first and second set of conditions.

1 21. The system of claim 20, wherein the heat sink additionally comprises fins
2 on the main section and the extended section.

1 22. The system of claim 21, wherein the fins on the extended section of the
2 heat sink are twice the spacing as the fins on the main section.

1 23. A machine-readable medium having stored thereon data representing
2 sequences of instructions, the sequences of instructions which, when
3 executed by a processor, cause the processor to perform the following:
4 monitor a first sensor, the first sensor communicatively coupled to a high
5 thermal dissipating object in a system to monitor a temperature of

6 the object;
7 monitor a second sensor, the second sensor communicatively coupled to
8 the system to monitor a temperature of the system;
9 enter a first stage by causing at least one fan in the system to operate in
10 response to conditions as detected by the first and second sensors;
11 and
12 enter an intermediary stage by reducing the speed of at least one of the at
13 least one fans in response conditions as detected by the first and
14 second sensors.

1 24. The machine-readable medium of claim 23, wherein the processor causes
2 the system to enter a first stage by detecting at least one of the following
3 conditions:

4 a computer system CPU (central processing unit) dissipating full thermal
5 design power
6 elevated temperatures in a chassis to house the system fan, impinging
7 fan, CPU, and heat sink.

1 25. The machine-readable medium of claim 24, additionally comprising the
2 processor to cause the system to enter a final stage by detecting one or
3 more third conditions by causing the fans to shut off.

1 26. The machine-readable medium of claim 25, wherein the elevated
2 temperatures comprise elevated temperatures inside of a computer

3 system chassis.

1 27. An apparatus comprising:

2 at least one processor; and

3 a machine-readable medium having instructions encoded thereon, which

4 when executed by the processor, are capable of directing the

5 processor to:

6 monitor a first sensor, the first sensor communicatively coupled to a

7 high thermal dissipating object in a system to monitor a

8 temperature of the object;

9 monitor a second sensor, the second sensor communicatively

10 coupled to the system to monitor a temperature of the

11 system;

12 enter a first stage by causing at least one fan in the system to

13 operate in response to conditions as detected by the first

14 and second sensors; and

15 enter an intermediary stage by reducing the speed of at least one of

16 the at least one fans in response conditions as detected by

17 the first and second sensors.

1 28. The apparatus of claim 27, additionally comprising causing the system to

2 enter a final stage by causing each of the at least one fans to shut off

3 when a third set of conditions is detected.

1 29. The apparatus of claim 27, wherein said causing at least one fan to
2 operate comprises causing at least a first and second one of the at least
3 one fans to operate in succession.

1 30. The apparatus of claim 27, wherein said causing at least one fan to
2 operate comprises causing at least a first and second one of the at least
3 one fans to operate simultaneously.